IMPORTANT NOTICE

Please remove the small coin envelope attached to this Notice and set it aside. Then make the following Manual changes before you begin to assemble your kit.

ASSSEMBLY MANUAL

Page 10 — Right column. Change the fourth item:

From:	346-35	4"	Small heat-shrinkable sleeving
To:	346-35	3-1/2"	Small heat-shrinkable sleeving

Page 11 — Left column, under "Miscellaneous."

Change:	B8	390-2676	1	Head label**
To:	B8	390-2773	1	Head label**

Page 17 — Right column. Change the second item:

From:	6-4991-12	1	4990 Ω (yel-wht-wht-brn)	R361
To:	6-4991-12	2	4990 Ω (yel-wht-wht-brn)	R361, R359

— Right column. Cross out the fourth item.

Page 23 — Left column, under "Section 6." Change the third step:

From:	( ) R359: 9090 Ω, 1% (wht-blk-wht-brn).
To:	( ) R359: 4990 Ω, 1% (yel-wht-wht-brn).

Page 27 — Right column, second step. Change the step to read as follows:

( ) "Y301: Mount the 420 kHz crystal (#404-682) at Y301 on the circuit board as shown and solder the leads to the foil."

Page 30 — Left column, second step. Change the third line of the step to read:

"... tween plug P302/P303 pins 3 and 8."

Page 33 — Left column, under "Transistors – Integrated Circuits (ICs)." Change the third item from the bottom:

From:	444-254-1	1	16K × 8-bit ROM	U208
To:	444-254-2	1	16K × 8-bit ROM	U208

— Change the second item from the bottom:

From:	444-283-1	1	16K × 8-bit ROM	U207
To:	444-283-2	1	16K × 8-bit ROM	U207

<u>Page 39</u> — Left column, first step. Change the step to read:

"( ) U208: 16K × 8-bit ROM (#444-254-<u>2</u>)."

— Left column, second step. Change the step to read:

"( ) U207: 16K × 8-bit ROM (#444-283-<u>2</u>)."

— Right column. Add the following step after the second NOTE:

"( ) C201: 4.7 μF electrolytic."

<u>Page 42</u> — Left column, under "Other Hardware." Change the fifth item:

From:	F5	254-45	2 1/2" split lockwasher
To:	F5	254-45	<u>1</u> 1/2" split lockwasher

— Change the ninth item:

From:	F9	258-756	1 Retaining spring
To:	F9	258-<u>770</u>	1 Retaining spring

<u>Page 43</u> — Right column. Change the last item:

From:	L18	655-17	3 Wheel
To:	L18	655-<u>21</u>	3 Wheel

<u>Page 44</u> — Right column, step "<u>1.</u>" Cut out the new step below and tape it over the old step.

1. Use 4-40 × 3/8" hardware to mount the optical switch onto the indicated side of the angle bracket as shown in Part A of the Detail. There are symbols on both sides of the sensor, so make sure you position it with the symbols correctly positioned as shown. Then tighten the hardware finger tight.

<u>Page 47</u> — Right column, second step. Cross out step "1."

<u>Page 50</u> — Detail 4-10A. Change the 20" dimension to <u>21"</u>.

<u>Page 64</u> — Left column, last step. Change the last line to read:

"... lug 1 of terminal strip TS1 (S-1).

<u>Page 67</u> — Right column. Add the following step to the top of the column:

"( ) Use a pair of pliers and straighten the sonar
transducer retaining spring so it will fit into
the sonar transducer tabs in the next step."

<u>Page 68</u> — Tape the new Page 68 supplied with this Notice over Page 68 in your
Manual.

ILLUSTRATION BOOKLET

<u>Page 4</u> — Remove the new Pictorial 2-3, attached to this Notice, and tape it over
the old Pictorial 2-3.

<u>Page 12</u> — Cut out the new item <u>G4</u> and tape it over the old G4.

<u>Page 18</u> — Delete the inner 1/2″ split lockwasher from Pictorial 4-7.

<u>Page 21</u> — Remove the new Pictorial 4-15, attached to this Notice, and tape it over
Pictorial 4-15 in your Illustration Booklet.

TAPED COMPONENT CHART

<u>Page 1 of 2</u> — Left column under the instructions at the top of the page. **Change the**
third line of the second paragraph to read:

"... the strip so the <u>blue</u> tape is toward your right."

— Right column, Section 6. Change the second item to read:

"4990 Ω, 1% (yel-wht-wht-brn)."

Then cut out the following NOTE about the new item and tape it at
the top of the right column.

"NOTE: Remove and discard the second resistor, 9090 Ω,
1% (wht-blk-wht-brn) from the taped strip. Then remove the
4990 Ω, 1% resistor from the small coin envelope that was
attached to this Notice and tape it in place of the resistor you
just removed.

<u>Last Page</u> — Right column, under "Taped Component Chart (Pack #3)." **Change the**
third item in Section 4:

From: 680 (blu-grn-brn)
To: 680 (blu-<u>gry</u>-brn)
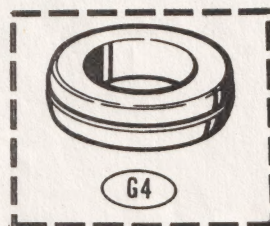
TECHNICAL MANUAL

<u>Page 35</u> — Last listing, center column.

      Change: 444-254-1
      To: 444-254-<u>2</u>

<u>Page 36</u> — First listing, center column.

      Change: 444-283-1
      To: 444-283-<u>2</u>

<u>Page 39</u> — Left column, under "Integrated Circuits."

      Change: U207   444-283-1
                 U208   444-254-1

      To: U207   444-283-<u>2</u>
                 U208   444-254-<u>2</u>

<u>Page 40</u> — Left column, under "Resistors – Controls (Cont'd.)."

      Change: R359   6-9091-12   9090 Ω resistor
      To: R359   6-<u>4991</u>-12   <u>4990</u> Ω resistor

SCHEMATIC

<u>Sheet 4 of 4</u> — Find R359 in the center, bottom of the Schematic and change 9090 to <u>4990</u>.

OWNER'S GUIDE

Cut out the new paragraph below and tape it on the inside of the front cover of your Manual.

CAUTION: The battery cells contained in the Robot are permanently sealed and should not leak. However, if they are damaged and you see any leakage, be sure to dispose of them properly. DO NOT break, crush, or burn them. The battery cells contain acid. The acid is poisonous and can cause severe burns, eye damage, and property damage on contact. Keep out of reach of children.

ANTIDOTE External — Flush with water.
         Internal — Drink large quantities of water or milk. Follow with milk of magnesia, beaten eggs, or vegetable oil. Call physician immediately.
         Eyes — Flush with water for 15 minutes and get prompt medical attention.

PROGRAMMER'S GUIDE

Page 6 — Remove the new Page 6 attached to this Notice and tape it over Page 6 in your Manual.

Thank you,

HEATH COMPANY

( ) Cut a 15" length of 2-wire cable. Separate the wires at each end of the cable for 1-1/4". Then prepare the ends.

( ) Install a small spring connector onto each wire at one end of the 2-wire cable.

( ) Position a 3-pin socket shell as shown in the Pictorial. Then push the spring connector on one of the wires into hole 2 and the other wire into hole 3 of the socket shell.

( ) Cut two 1" lengths of small heat-shrinkable sleeving. Then slide a piece of sleeving onto each lead at the free end of the prepared 2-wire cable.

( ) Form a small hook in the ends of each wire at the end of the 2-wire cable where you have the small sleeving. Then hook the wires onto the leads of photo resistor LDR1 and solder the connections.

( ) Slide the sleeving down the wires so they completely cover the photo resistor leads and the connections. Then use heat to shrink the sleeving against the connections.

( ) Route the cable along the inside of the head panel as shown and press it into the cable clip at TL. The connector on the end of this cable will be connected later.

( ) Cut a 16" length of shielded cable. Then refer to Detail 4- 16F and prepare each end of the cable as shown.

( ) Install a small spring connector on each wire at one end of the prepared cable.
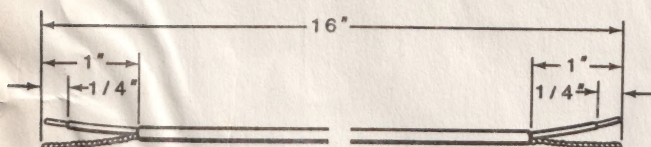
( ) Position a 3-pin socket shell as shown in the Pictorial. Then push the spring connectors on the prepared cable into the socket shell as follows:

Inner wire into hole 2

Shield wires into hole 3

( ) Refer to Detail 4-16G and install a small push-on connector on each wire at the free end of the prepared shielded cable.

( ) Refer to Detail 4-16G and insert the push-on connectors over the lugs of sonar tranducer A4 as follows. Make sure you position the connectors on the lugs as shown.

Inner wire onto lug 1

Shield wire onto lug 2

( ) Route the shielded cable along the inside of the head panel as shown in the Pictorial. Then press it into the cable clip at TL. The connector on the free end of this cable will be connected later.

( ) Install a cable tie around the shielded cable, the 2-wire cable, and the cable coming from the keyboard in the area shown in the Pictorial. Then cut off any excess tie.

CRIMP OVER WIRE AND SOLDER

FLAT SIDE

DIMPLE
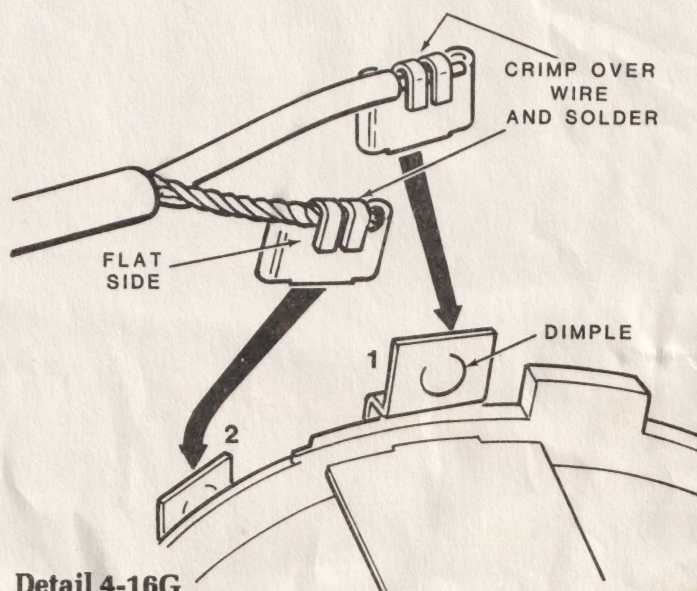
Detail 4-16G

Detail 4-16F
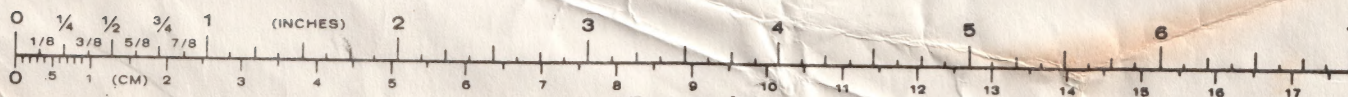
RS-232 ACCESSORY OPERATION

The RS-232 Accessory is a serial interface that allows you to transfer files from a computer to the Robot or from the Robot to a computer. Terminal emulation software (such as CPS) is recommended for moving the data back and forth. The files must be in Motorola's MIKBUG format, or you can write your own handler if you want to use other formats.

Assemblers that will operate on Heath/Zenith Computers are available from the Heath User's Group (HUG) or from Motorola. Heath User's Group assemblers are:

COMPUTER	OPERATING SYSTEM	PART #
H8	H-DOS	885-1123
H/Z-89	H-DOS	885-1123
H/Z-89	CP/M (hard sectored)	885-1229
H/Z-89	CP/M (soft sectored)	885-1229-37
H/Z-100	CP/M-85	885-1229-37

The serial I/O cables for RS-232 use that are available from Heath Company are listed below. NOTE: The RS-232 connector on your Robot's RS-232 Accessory is considered to be a female connector.

> HCA-11 Has a male connector on one end and a female connector on the other end (for terminals and computers that have a male connector).

> HCA-10 Has a male connector on each end (for terminals and computers that have a female connector).

Plug a serial I/O cable, with appropriate connectors, between your Robot's RS-232 connector and computer.

LOADING A PROGRAM INTO THE ROBOT

NOTE: This example is run on the H/Z-100. When using another system, follow the instructions of the system.

To load a file, first set the baud rate jumper (as explained below under "Baud Rate Selection").

- Load the terminal emulation software (example: CPS) into your computer.

- Press the Robot's RESET key. The Robot will say, "Ready."

- While you hold down the Robot's ENTER key, press and release the 0 key; the Robot will say, "Robot Wizard." Then press the Robot's F B F 8 ENTER keys.

  The following prompt will appear on the screen:

  d>

- Type L RETURN. The Robot is now ready to accept the file from the computer.

- Transfer the file to the Robot using the commands for your particular emulation software. (Example: Type F1 3 FILENAME.EXT for our CPS example.)

- After the file is loaded, there will again be the d> prompt.

DUMPING A FILE FROM THE ROBOT

- Press the Robot's RESET key. The Robot will say, "Ready."

- While you hold down the Robot's ENTER key, press and release the 0 key; the Robot will say, "Robot Wizard." Then press the Robot's F B F 8 ENTER keys.

- Load the terminal emulation software into your computer (Example: CPS).
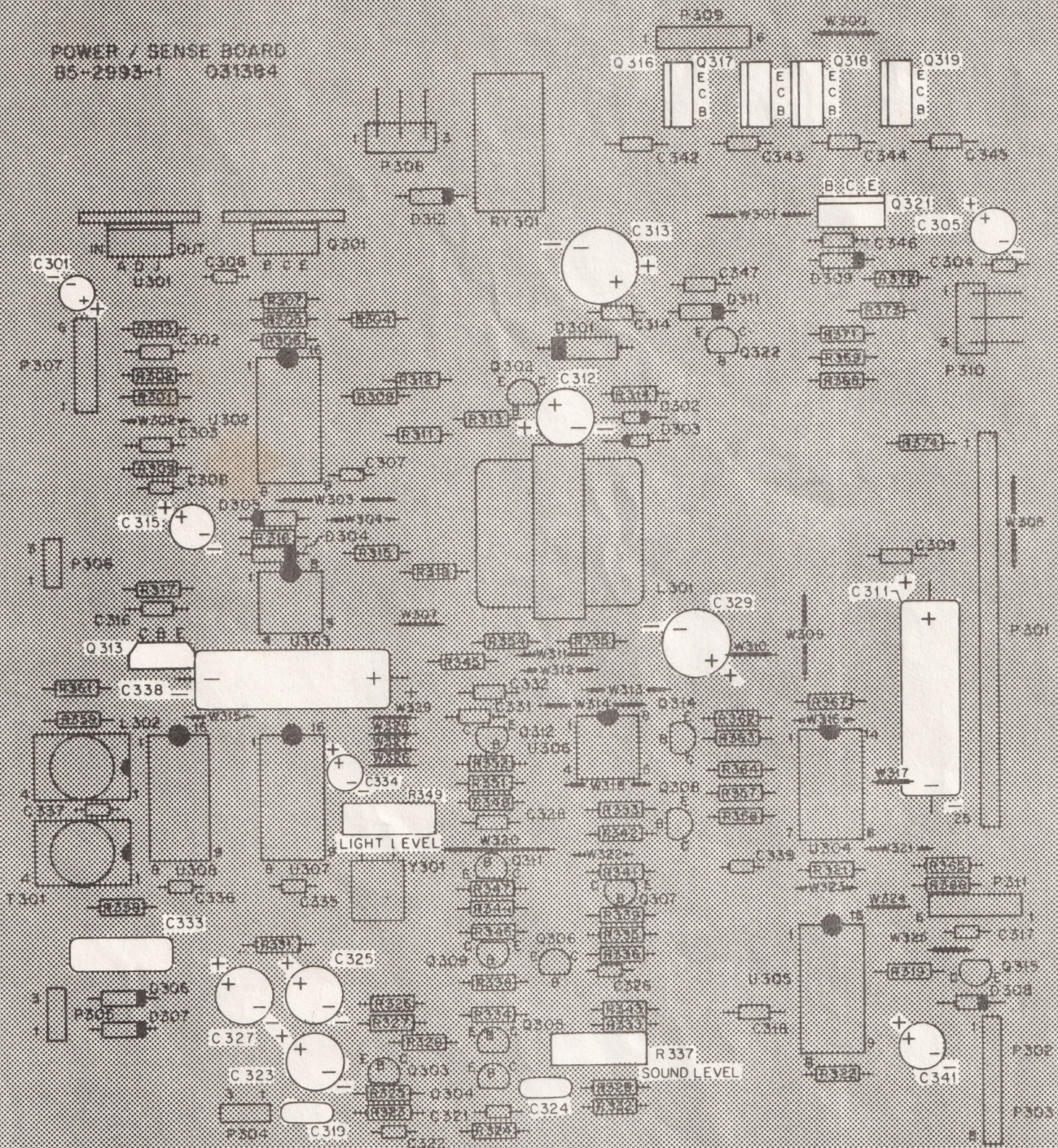
  The following prompt will appear on the screen:

  d>

- On your terminal, enter F3 and then D (then the start address, consisting of four hex digits, comma, and the stop address of four hex digits). For example: D 8000, 8100.

- Transfer the file using your emulation software. (In our CPS example, enter F6 FILENAME.EXT.)

PICTORIAL 2-3

HEAD
PLATE

#6-3/8"
HEX HEAD
SHEET METAL
SCREW

7/
RUB
GRO

HEATH
ZENITH

HERO·JR

GOLD-CO
WIR
TO LOW
EYEL

SILVER-COLORE
WIRE
TO LOWER
EYELET

INSET #1

LIGHT
SENSOR

SLOTS
DOWN

PICTORI

INSET #2

PULL TIGHT
AND
CUT OFF

TEETH

CABLE
TIE

HA

7/16"
RUBBER
GROMMET

LARGE
CABLE
CLAMP

FRONT
SUBPANEL

D-WASHER

6-32x3/8"
HEX HEAD
SCREW

BASE
PLATE

2-WIRE
CABLE

COLORED
WIRE
POWER
EYELET

BB

2

TS1

BL

5" RED

6" LARGE
RED

RED

BF

RED
BLK

BE

BD

B1

5" BLK

B2

POSITIVE (+)
OR
DOT-MARKED
LUG

NEGATIVE (-)
OR
UNMARKED LUG

NEGATIVE (-)
OR
UNMARKED LUG

6" WHT

POSITIVE (+)
OR
DOT-MARKED
LUG